DATABASE ACTIVITIES IN THE BIOLOGICAL SCIENCES

Program Announcement

SPECIAL PROJECTS PROGRAM
DIVISION OF INSTRUMENTATION AND RESOURCES
DIRECTORATE FOR BIOLOGICAL SCIENCES

PROPOSAL TARGET DATE: ***10 January***

NATIONAL SCIENCE FOUNDATION

I. DESCRIPTION

A. Overview

The Directorate for Biological Sciences (BIO), through its Special Projects Program in the Division for Biological Instrumentation and Resources (BIR), announces a cross-disciplinary effort to support the design, development, implementation, and use of information resources (http://www.nsf.gov/bio/). All fields of science supported by the BIO Directorate are eligible for support under this Database Activities (DBA) effort. Research collaboration involving academic or commercial computer scientists and information-retrieval specialists is strongly encouraged.

The biological sciences have become increasingly data rich. Mapping genomes, describing synaptic connections, documenting species diversity and tracking long-term environmental change are just a few examples of biological research programs that generate and require large amounts of archival information. The National Science Foundation (NSF) believes that future advances in the biological sciences will depend upon effective management of existing information as well as upon the creation of new knowledge.

Improving the informational infrastructure of the biological sciences will require a number of activities, including implementation of new public-use databases and software, development of new methods and tools, research into the theoretical foundations of scientific data management, training in biological data management, and increased opportunities for the exchange of ideas among those interested in biological information management.

Therefore, the objectives of the DBA effort are to encourage:

- development (including planning and subsequent design, prototyping, implementation, testing, and distribution) of databases crucial for biological research;
- in conjunction with other disciplinary funding sources, the maintenance and expansion of community databases, which provide access to important biological information resources;
- development of algorithms and software related to the management and analysis of biological information resources;
- development of new methods and tools for the construction, operation, and access of biological databases;
- research into development of new data structures and new data-management systems for biological databases;
- activities which will facilitate development of biological databases, such as efforts to standardize nomenclature, conceptual information models, and semantic content;
- activities that will facilitate the exchange of ideas among those involved in biological database research;
- activities that will increase the number of individuals with dual expertise in biological science and database theory and methods; and,

- activities (such as workshops, training, and collaborations between computer scientists and biological researchers) that will enhance development and use of information resources.

These activities fall along a continuum, from theoretical development of new algorithms and data structures to the development of resources used by whole communities of biological researchers, from the theoretical and general to the applied and specific. For example, theoretical research on data structures can lead to planning and prototype development of new types of biological databases. Prototype databases with restricted capabilities can be expanded to form fully implemented databases, with easy-to-use interfaces for data input, manipulation, analysis and extraction. Successful fully implemented databases may become "community databases" through the development of a network of researchers whose activities depend on access to the database.

At each stage along the continuum, the criteria for success are different. Unlike fully implemented databases, prototype databases are not expected to manage a large volume of information or to be accessible by large numbers of researchers. Databases evolve into community databases because their scientific value makes them useful to biological researchers. Scientific value of a database is a function of the currency and utility of the underlying data and the quality of database implementation. Successful community databases either permit fundamentally different types of scientific questions to be answered, or provide major cost-savings to researchers. It is by no means expected that every theoretical development or prototype will lead to a community database, only that they have the potential to do so. A similar continuum can be applied to tools, from prototype tools to widely distributed tools.

Because DBA activities are expected to be interdisciplinary, involving fields of science supported by various NSF programs, potential applicants are encouraged to discuss their ideas with appropriate program officers. Contact information for other BIO Directorate programs and descriptions of NSF programs are available on the World Wide Web at http://www.nsf.gov and via STIS network servers (see inside front cover).

Proposals that emphasize database activities should be submitted directly to the DBA effort of the Special Projects Program. However, proposals that combine database activities with other research objectives may be submitted either directly to DBA or to the relevant program in BIO or another Directorate for potential joint review. Applicants considering submitting DBA-related proposals to another NSF program should contact the appropriate NSF Program Director to ensure that the proposal is appropriate.

Funding needs for community databases fall into two general categories: development and curation. Development activities include the upgrading of database storage, query and access tools, while curation activities focus on data input, distribution of data to researchers, quality control and data management. Community databases are expected to obtain financial support not only from DBA, for development activities, but also from other sources, for curation activities. Shared support can take the form of a single proposal submission to be co-reviewed by different NSF programs, independent proposals to multiple funding sources for<u>different</u> aspects of the work and/or direct financial support from user groups. Cooperative funding for the upgrade and expansion (i.e. development) of a community database by DBA is contingent upon the willingness of other funding sources, such as other research programs within NSF or other funding agencies to provide partial support for the maintenance and curation of the database. Applicants considering preparing a proposal for support of a community database should contact the appropriate NSF Program Directors or appropriate officials in other agencies to ensure that the proposal will meet respective criteria for funding.

DBA proposals may require various levels of support. Typical awards for database and tool prototyping and implementation vary from $50,000 to $300,000 per year, for two to three years.

B. Illustrations of Appropriate Activities

The best ideas for research will originate from investigators, so that the issues described below are only illustrative of the scope of the BIO Database Activities effort. Potential applicants are strongly encouraged to write or call and discuss their ideas with DBA staff.

Database and Software Development:
Development of new, public-access databases, including related data-management software, is a recognized need in biological science. The development of such systems requires considerable effort in planning, design, prototyping, implementation, testing, and distribution, with success at each step largely dependent upon the quality of the preceding work. For this reason, except for databases that can be implemented using generic network and database tools, DBA will not consider single proposals that span all phases of development, from initial planning through full implementation.

Proposals that involve the full implementation and public distribution of databases or software should be based upon: (1) pre-existing feasibility and cost-benefit analyses; (2) pre-existing needs analyses and design efforts; (3) working proof-of-concept software; (4) demonstrated support of the intended scientific community; and (5) a well-developed plan for the long-term support and maintenance of the databases or software. In the absence of these important initial activities, applicants are encouraged to apply only for support of early development.

Community databases should be well developed and have a demonstrable existing user base. Proposals for the support of the further development and expansion of a community database should: (1) define the biological research community served by the database; (2) demonstrate support and use by that community of the current implementation of the database; (3) include examples of important research activities that have benefited directly from use of the database; and (4) provide evidence that the database is cost-effective.

Methods or Tools Development:
DBA will consider proposals that have the development of methods or tools as their primary goal because database design, implementation, operation, and use can be facilitated through such development. Such proposals must identify currently unmet needs and describe the impact of the proposed activities. Proposals should describe: (1) the project goals and their implications for biological database activities; (2) prior work and results; (3) the anticipated products from the proposed work; and (4) a plan for making the products available to the biological sciences research community. Proposals should demonstrate extensive familiarity with existing methods and tools and document how the proposed work differs from existing systems.

DBA Research:
Research funded by DBA is expected to bring both computer-science and biological science perspectives and expertise to bear on the development of information resources. These perspectives may be represented by a single investigator (with assistance from advisors as needed) or by collaborating investigators with different disciplinary backgrounds.

Each research proposal must identify an important problem and appropriate methods by which to study it. The proposal should describe (1) project goals and their implications for BIO database activities; (2) theoretical and methodological foundations for the research; (3) how the project will benefit one or more specific fields of biological science; (4) prior work and results; and (5) the anticipated product(s) of the new work.

Planning Grants:
Recognizing that developing an adequate plan for work in database activities often requires considerable preliminary effort, the NSF encourages applicants to consider submitting requests for support of planning and design activities. Proposals involving incremental funding will also be considered.

Conferences and Workshops:
DBA will help support national or international conferences, symposia, and workshops that enable leading scientists, engineers, scholars, policy makers, representatives of interested groups, and others to develop, evaluate, and share the planning and design of database activities or new research findings. Meetings that are sponsored or co-sponsored by national associations or organizations or that have concomitant support by other Federal agencies or private organizations are especially encouraged. Supported conferences and workshops should reach a wide audience through rapidly published proceedings (either paper or electronic) and speakers and participants are expected to reflect the diversity of the scientific community. Only under the most extenuating of circumstances will conferences, workshops or meetings be supported that have no women on the program. Support of junior investigators, post-doctorals and graduate students is especially appropriate.

Workshops or conference proposals should include: (1) a well-identified scientific need that the workshop or conference will address (including previous efforts in that area); (2) a preliminary program for the workshop or conference; (3) a list of potential participants, or a clear set of procedures for selection; (4) plans for announcing the workshop or conference; (5) plans for selection and support of graduate students, post-doctorals and junior faculty to attend the workshop or conference; (6) a list of products (e.g., proceedings, action plans, reference materials) that will result from the conference or workshop; and (7) plans for the dissemination of results (use of computer networks to disseminate results is strongly encouraged).

Other Activities:
DBA educational projects, such as training institutes, tutorials, and other training activities are eligible for consideration. Such activities can include projects to collect, compile, and publish appropriate background materials (e.g., annotated database schemata or collected works on biological database design) that provide a resource for researchers involved in biological database activities. Proposals to carry out necessary prerequisites for database activities, such as working groups, nomenclature standardization efforts, etc., are also appropriate.

C. Excluded Activities

Proposals for DBA work of a clinical or toxicological nature, or research with disease-related goals will not be considered. This includes work on the etiology, diagnosis, or treatment of physical or mental disease or abnormality or malfunction in human beings or animals. Animal models of such conditions and the development or testing of drugs or other procedures for their treatment also are not eligible for support. In addition, proposals with primary goals of education and/or training in fields other than biological information management will not be considered.

II. SUBMISSION OF PROPOSALS

A. Who May Submit

The Database Activities effort will accept proposals from individuals, institutions, and organizations who meet the general eligibility requirements outlined in the Grant Proposal Guide (NSF 95-27).

B. Proposals

Proposals with DBA components may be submitted either directly to the DBA effort of the Special Projects Program or to other programs in BIO or elsewhere in NSF. Proposals with DBA components that are submitted to other programs must be prepared and submitted according to the policies and deadlines of those programs, and must also adhere to the guidelines of the DBA effort.

Proposals submitted directly to DBA should follow the guidelines below.

When to Submit: To ensure inclusion in the current competitive review process, formal proposals must be received in the NSF on or before the target date given on the cover of this announcement. Proposals are normally reviewed and the results communicated to applicants within six months of the target date.

Where to Submit: Fifteen (15) copies of each proposal, including one copy bearing original signatures, should be mailed to:

BIR Database Activities in Biological Sciences
National Science Foundation PPU
4201 Wilson Blvd. Room P60
Arlington, VA 22230

Only one (1) copy of NSF Form 1225, Information about Principal Investigators/Project Directors, should be sent, and should be attached to the original signed proposal. If the proposal copies are mailed in more than one package, the number of packages should be marked on the outside of each (e.g., 1 of 3).

An information copy should be sent directly to:

Database Activities in the Biological Sciences
Division of Biological Instrumentation and Resources
National Science Foundation, Room 615
4201 Wilson Blvd.
Arlington, VA 22230

Proposals must be sent prepaid, not collect.

NSF will send an acknowledgment of receipt of the proposal, which will contain an identification number. Later communications about the proposal should be addressed to DBA and be identified by the NSF proposal number.

What to Submit: All applicants should follow the standard NSF guidelines in Grant Proposal Guide. All proposals should contain the sections outlined in GPG in the order indicated. The Proposal Forms Kit (NSF 95-28) contains all of the forms needed for formal submissions. GPG standards must be followed, including restrictions on appendices and supporting materials.

In addition to the standard sections outlined in GPG, DBA proposals must also describe the impact of the proposed work. Potential new discoveries or advances anticipated and the specific contributions the proposed work will make toward expanding or developing the knowledge and technology base of biological science should be discussed. Reviewers will be asked to comment on this aspect of the work. The likelihood that the proposed activity will lead to new discoveries or fundamental advances in the knowledge or technology base will be an important criterion for support.

III. PROPOSAL PROCESSING AND EVALUATION

Proposals are usually evaluated on the basis of four criteria: (1) research performance competence; (2) intrinsic merit of the research; (3) utility or relevance of the project; and (4) effect of the research on the infrastructure of science and engineering. See the Grant Proposal Guide for a discussion of these general criteria. Reviewers will be asked to evaluate DBA proposals by interpreting the four basic criteria according to the following additional guidelines because DBA proposals will differ significantly from those for other types of individual research project grants.

- Research performance competence: This criterion relates to the capability of the investigator(s), the technical soundness of the proposed approach, and the adequacy of the resources available or proposed. An important issue is the familiarity of the investigator(s) with both the biological science and the computer science aspects of the proposed activity.

- Intrinsic merit of the proposed work: This criterion is concerned with the overall quality of the work to be done and with the likelihood that this work will lead to new discoveries or to fundamental advances in the knowledge or technology base of biological science.

- Utility or relevance of the proposed activity: This criterion reflects the likelihood that the research might serve as the basis for a new or improved technology or contribute to the solution of a societal problem. An important issue is the likelihood that the proposed work will yield results with generic usefulness and application.

- Effect of the activity on the infrastructure of science and engineering: This criterion relates to the potential of the proposed activity to contribute to better understanding or improvement of the quality, distribution, or effectiveness of the Nation's scientific and engineering infrastructure. An important issue is the likelihood of national impact and widespread appropriate dissemination and use of results.

- Linkages and knowledge transfer efforts to other sectors and groups: This criterion is used to assess whether appropriate other sectors or groups will be involved in the proposed activity. Scientific database activities require the close involvement of the relevant research communities. Have these communities been adequately identified and have appropriate steps been taken to involve them? Included are questions about the appropriateness, form, and likely success of knowledge or technology transfer efforts.

- Management and operational plans and arrangements: This criterion applies specifically to proposals involving the implementation and distribution of public-use databases, software, or tools. An important issue here is the adequacy of the proposed plan(s) for managing and operating the distribution and support of public-use systems.

- Educational and training components of the database activities: This criterion also applies specifically to proposals involving the implementation and distribution of public-use databases, software, or tools. At issue here is the adequacy of the method(s) proposed to provide training and documentation to the users of the results of the proposed activity.

Experience suggests that proposals are more likely to be successful if they:

- Establish a strong scientific need for the type of activity proposed.
- Show that the proposed activity will meet that need.
- Include an implementation plan that is appropriate and likely to succeed.
- Propose appropriate utilization of existing network, computational and database technologies.
- Demonstrate that the proposed activity will generate benefits sufficient to justify the costs of its development.

Grants will be awarded on a competitive basis. Typically proposals will be reviewed by both ad hoc (mail) and panel reviewers. DBA proposals will usually be reviewed both by experts in computer science as well as by experts in applicable biological science research field(s).

Applicants are encouraged to submit names and addresses of potential reviewers for their proposal. Applicants may also indicate individuals whom they feel would be inappropriate as reviewers. NSF staff will be guided, but not bound, by such suggestions. Suggestions regarding reviewers should be sent in a separate communication (letter or electronic mail) to Database Activities (BIRDBA@NSF.GOV) and should reference the NSF proposal number.

IV. AWARD HIGHLIGHTS

Grant Administration Highlights

Grants awarded as a result of this announcement will be administered in accordance with the terms and conditions of "Grant General Conditions" (NSF GC-1), or "Federal Demonstration Project General Terms and Conditions" (NSF FDP-II), depending on the grantee organization. Copies of NSF GC-1 and NSF FDP-II are available at no cost from the NSF Forms and Publications Unit or via electronic mail (pubs@nsf.gov). This Program Announcement is available electronically through the NSF STIS (Gopher) and WWW servers. More comprehensive information on NSF policies is contained in the NSF Grant Policy Manual (NSF 95-26), for sale through the Superintendent of Documents, Government Printing Office, Washington, DC 20402. The telephone number at GPO is (202) 521-3238 for subscription information.

If a proposal is recommended for an award to a first-time grantee, the NSF Division of Grants and Agreements (DGA) will require certain organizational, management, and financial information before the award can be made. These requirements are described in Chapter IV of the Grant Policy Manual (NSF 95-26). The NSF DGA may also be contacted for information.

V. POST-AWARD RESPONSIBILITIES

A. Final Project Report

A Final Project Report (NSF Form 98A), including the Part IV Summary, is required within 90 days of the expiration of the grant.

B. Publication of Results

The primary goal of the DBA effort is the development and expansion of the information infrastructure in biological science. Therefore, DBA grantees are expected to make every effort to

publish, or otherwise make generally available, the results of their supported activities. In addition to publishing the results of their work as it affects relevant fields of BIO science, grantees should make every effort to publish descriptions of their technical activities and accomplishments, such as database designs, data structures, and algorithms.

C. Distribution of Materials

As a condition any award resulting from this program announcement, the awardee must agree that in the event of non-renewal of the award it will transfer to NSF or its designee, without condition or additional charge, a current version of the database or software. This should include current versions of all software necessary for entry submission and for database operation or tool operation, user and system documentation and documentation of database design (data dictionary, conceptual and physical schemata, integrity constraint documentation, and application source code and documentation).

VI. FUTURE SUPPORT

It is NSF policy that reviewers evaluate the quality of prior NSF-supported work. If DBA grantees apply for future support, the technical materials submitted, published, and distributed (per section V, Post Award Responsibilities, above) will all be examined as part of this "evaluation of quality of prior work." Therefore, applicants are advised that the quality of these technical materials will play a significant role in determining their eligibility for future support by the National Science Foundation.

VII. INTELLECTUAL PROPERTY RIGHTS

The National Science Foundation makes no claim to copyright of inventions or writings that might result from DBA awards. However, should copyrightable materials result from the funded activity, grantees should be aware that they will be required to provide the Federal government with a non-exclusive, nontransferable, irrevocable, royalty-free license to exercise, or have exercised for or on behalf of the United States throughout the world, all the exclusive rights provided by copyright.

In addition, grantees should be aware of the requirements for publication and distribution of technical materials developed with DBA support as outlined in Section V, Post Award Responsibilities, above. Grantees should also note their obligation to include an acknowledgment of NSF support (citing an award number) and, when required, a disclaimer of NSF responsibility resulting from DBA support in all publications.

VIII. OTHER RELATED PROGRAMS

Support for database activities in biology may also be obtained from other programs within the National Science Foundation. Several research programs within the BIO Directorate support database applications within the context of research projects. In addition, the Database Program in the Division of Information, Robotics, and Intelligent Systems (IRIS) of the Directorate for Computer and Information Science and Engineering (CISE) supports computer science research on database systems. In determining where to seek support, recognize that database activities occur over a continuum, from database systems research to database application maintenance and data curation. The support of primary database research falls to the database program in IRIS/CISE. Support of software application maintenance and data management falls to the appropriate BIO Directorate research program. The primary mission of DBA is to bridge the gulf between primary database research in a computer science context and application maintenance or data management by

supporting activities that would be considered too applied to warrant support from the CISE and too technical or theoretical for a research program in BIO.

Applicants are encouraged to contact the appropriate NSF program officers to discuss their ideas prior to proposal submission. If a proposal is interdisciplinary a joint review of the proposal is often possible within the Foundation.

IX. ADDITIONAL PROGRAM INFORMATION

Inquiries regarding the DBA program should be directed to:

Division of Biological Instrumentation and Resources, Room 615
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230
Tel: (703) 306-1470
Fax: (703) 306-0356
E-mail: birdba@nsf.gov

X. GENERAL NSF INFORMATION

The Foundation provides awards for research in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for the research findings or their interpretation.

The Foundation welcomes proposals from all qualified scientists and engineers and strongly encourages women, minorities, and persons with disabilities to compete fully in any of the research related programs described here. In accordance with federal statues, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF projects. See the program announcement or contact the program coordinator at 306-1636.

Privacy Act and Public Burden. The information requested on proposal forms is solicited under the authority of the National Science Foundation Act of 1950, as amended. It will be used in connection with the selection of qualified proposals and may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees; to provide or obtain data regarding the application review process, award decisions, or the administration of awards; to government contractors, experts, volunteers, and researchers as necessary to complete assigned work; and to other government agencies in order to coordinate programs. See Systems of Records, NSF 50, Principal Investigators/Proposal File and Associated Records, and NSF-51, 60 Federal Register 4449 (January 23, 1995). Reviewer/Proposal File and Associated Records, 59 Federal Register 8031 (February 17, 1994). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of your receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Herman G. Fleming, Reports Clearance Officer, Contracts, Policy, and Oversight, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230.

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability, which enables individuals with hearing impairment to communicate with the Foundation about NSF programs, employment, or general information. To access NSF TDD dial (703) 306-0090; for FIRS, 1-800-877-8339.

OMB 3145-0058
CFDA 47.074
P.T. 34
K.W. 1002000, 1002024, 1004000
NSF 96-06 (Replaces NSF 90-70)

[NSF 96-06 is available only in electronic form on the NSF STIS (gopher://stis.nsf.gov) and World Wide Web (http://www.nsf.gov) Internet servers.]

Getting NSF Information and Publications (NSF 95-64)

The National Science Foundation (NSF) as several ways for the public to receive information and publications. Electronic or printed copies of the NSF telephone directory, abstracts of awards made since 1989, and many NSF publications are available as described below. To access information electronically, there is no cost to you except for possible phone and Internet access charges. Choose the method of access that matches your computer and network tools. For general information about Internet access and Internet tools, please contact your local computer support organization.

World Wide Web: NSF Home Page

The World Wide Web (WWW) system makes it possible to view text material as well as graphics, video, and sound. You will need special software (a "web browser") to access the NSF Home Page. The URL (Uniform Resource Locator) is http://www.nsf.gov/.

Internet Gopher

The Internet Gopher provides access to information on NSF's Science and Technology Information System (STIS) through a series of menus. To access the Gopher, you need Gopher client software; the NSF Gopher server is on port 70 of stis.nsf.gov.

Anonymous FTP (File Transfer Program)

Internet users who are familiar with FTP can easily transfer NSF documents to their local system for browsing and printing. The best way to access NSF information is to first look at the index (file name: index.txt). From the index, you can select the files you need. FTP instructions are:

- FTP to stis.nsf.gov.
- Enter anonymous for the username, and your e-mail address for the password.
- Retrieve the appropriate file (i.e., filename.ext).

E-Mail (Electronic-Mail)

To get documents via e-mail, send your request to the Internet address stisserve@nsf.gov. The best way to find NSF information is to request the index. Your e-mail message should read: get index.txt. An index with file names will be sent to you. However if you know the file name of the document you want, your e-mail message should read: get <filename.ext>.

E-Mail Mailing Lists

NSF maintains several mailing lists to keep you automatically informed of new electronic publications. To get descriptions of the mail lists and instructions for subscribing, send your request to: stisserve@nsf.gov. Your message should read: get stisdirm.txt.

On-Line STIS

NSF's Science and Technology Information System (STIS) is an electronic publications dissemination system available via the Internet (telnet to stis.nsf.gov); you will need a VT100 emulator. The system features a full-text search and retrieval software (TOPIC) to help you locate the documents. Login as public and follow the instructions on the screen.

To get an electronic copy of the "STIS USERS GUIDE," NSF 94-10, send an e-mail request to: stisserve@nsf.gov. Your message should read: get NSF9410.txt. For a printed copy of the "STIS USERS GUIDE," see instructions "How To Request Printed NSF Publications."

Non-Internet Access via Modem

If you do not have an Internet connection, you can use remote login to access NSF publications on NSF's on-line system, STIS. You need a VT100 terminal emulator on your computer and a modem.

- Dial 703-306-0212,
- choose 1200, 2400, or 9600 baud,
- use settings 7-E-1, and
- login as public and follow the on-screen instructions.

How to Request Printed NSF Publications

You may request printed publications in the following ways:

- send e-mail request to: pubs@nsf.gov
- fax request to: 703-644-4278
- For phone request, call: 703-306-1130 or Telephonic Device for the Deaf (TDD 703-306-0090)
- send written request to:
  NSF Forms and Publications Unit
  4201 Wilson Boulevard Room P-15
  Arlington, VA 22230

When making a request, please include the following information:

- NSF publication number;
- number of copies; and
- your complete mailing address.

Questions About NSF Publications, Programs, etc

Contact the NSF Information Center if you have questions about publications, including publication availability, titles, and numbers. The NSF Information Center maintains a supply of many NSF publications for public use. You may:

- visit the NSF Information Center, located on the second floor at 4201 Wilson Blvd., Arlington, Virginia, or
- call the NSF Information Center at 703-306-1234; or 703-306-0090 for TDD; or
- send e-mail message to info@nsf.gov.

Questions About the Electronic System

Send specific, system-related questions about NSF electronic publication services that are not answered in this flyer, to webmaster@nsf.gov or call 703-306-0214 (voice mail).

NSF 95-64 (Replaces NSF 94-4)